Table 2, Chapter 24. Implementation table—RRS

| **Author, year** | **Description of RRS** | **Study Design** | **Main Study objectives** | **Description of Organization** | **Implementation Themes** | **Comments** |
| --- | --- | --- | --- | --- | --- | --- |
| Adelstein, 20111 | offered in Appendix A but appendix not with pdf. uses two tiered mechanism for calling for assistance | prospective evaluation of breaches of PACE system before and after changes | to assess if new strategies could improve the time to delivery of MET components as compared to previous MET system | 750 bed tertiary university affiliated hospital | centralized activation system, review of all events, automatic escalation to code team if MET did not respond within 30 min, institution of nurse educator for training and compliance | quantitative |
| Buist,\* 20072 | Senior ICU nurse, senior ICU registrar and medical ward registrar. | before after design | too assess impact of change programs ( education program for new interns, nurse liaisons, and development programs for hosuestaff) on incidence of cardiac arrest | 400 bed suburban teaching hospital (first one in the world to have a true MET) | nurse liaison, career development and education/oreintation |  |
| Calzavacca, 20103 | MET system with ICU registrar and ICU nurse, 24/7 coverage for inpatients on general wards. | cohort comparison (early MET time period and another time period several years later) | Does maturation of a RRS improve the failure to rescue rate (recognition of deterioration) and the associated outcomes | 400 bd teaching hospital with several years of having a MET program (one of the earliest hospitals to have one) | change in delayed activations (late recognition), unanticipated ICU admission  institution of NFR (DNR) orders |  |
| Chen, 20104 | physician led MET consisting of senior ICU registrar, general med registrar and ICU nurse (MERIT study) | cluster-randomized | to assess reasons for calling emergency help between hospitals with a MET and those without | multiple (MERIT study hospitals) | effect of teaching hospital, metropolitan hospital, patient location and time of activation |  |
| Cretikos, 20075 | ICU registrar, ICU nurse, general medicine registrar (MERIT trial MET hospitals) | prospective | To assess the process components of MET implementation that correlated with utilization | 12 hospitals of varying sizes (the 12 MET hospitals in the MERIT trial) | knowledge of activation criteria, understanding of MET purpose, perceptions of readiness for change, overall attitude to MET program | Quantitative but only to utilization rates not outcomes |
| Donaldson, 20096 | not known as it involved multiple hospitals, probably varied | multi-modal (qualitative using interviews | Identify factors associated with successful implementation, develop plans to help others replicate such success, standardize process measures, evaluate impact through nurse perceptions. | multiple (>500 hospitals, nested within 9 multihospital grantee organizations) | Extra resources, rapid transfer, communication enhancement, “one stop shopping”(single team assessment), robust early adopters vs. late or poor functioning RRS | Very qualitative, did not define successful RRSs by any objective criteria |
| Foraida, 20037, DeVita, 20048 | ICU registrar, Anesthesia, ICU nurse, resp therapy; 8 defined roles-Team leader airway manager, airway assistant, procedure physician, chest compressions, runs medication/equipment chart, recorder, bedside nursing | prospective | to determine if specific educational and feedback interventions would increase MET utilization | 567 bed tertiary urban teaching hospital | immediate review of all stat sequential paging events, feedback to those involved in delaying MET activation, creating better objective alert criteria, dissemination and education for those new criteria.  Increase MET calls, and decrease multiple primary service stat sequential pages. | Quantitative data on utilization and incidence of cardiac arrest but not mortality |
| Genardi, 20089 | not given | prospective | to revitalize their existing RRT and improve on code reductions | community hospital (size not given) | education, support for nurses, critical thinking skills, increase access to RRT, change to centralized paging  rewards program (recognition of effort), improved documentation, alter alert criteria, ensure competencies | Quantitative, gives change in codes and mortality before and after change (% decrease only, no statistics reported) |
| Jones, 200610 | Pre-intervention had a unified code/MET team with anesthesiology, ICU and cardiology registrars, ICU nurse and primary service physician, post intervention separate the functions dropping the cardiology and anesthesiology members from the separate MET | prospective before after trial | to assess whether systems changes in existing MET would increase utilization rate, | 350 bed tertiary university affiliated hospital | Team composition (separation of unified code/MET into separate teams with separate activations), Method of activation (changing the activation methods to separate the teams), Triggers (changing alert criteria for calling a MET)  re-education on purpose of MET, criteria, and the changes | Quantitative data for utilization rates and incidence of true code calls |
| Jones, 200611 | ICU registrar, ICU nurse and receiving unit medical registrar. Separate from the code team | prospective interventional but continuous as opposed to before after with defined intervention change | assess education program to increase utilization of existing MET | 400 bed tertiary university affiliated hospital | education, improved communication, on-the-job aids (e.g., posters, observational charts), differences in MET usage for medical vs. surgical admissions | Quantitative data on utilization rate but it is continuous so may wish to exclude |
| Jones, 201012 | Rapid response nurse (2 dedicated positions), patient’s on-call physician | prospective | to determine if mandatory activation of MET improves outcomes compared to elective activation | 872 bed academic hospital | conversion from elective MET activation to mandatory based on alert criteria  Almost all METs/RRTs are not mandatory activation by staff despite alert criteria being met | Quantitative data on utilization and incidence of cardiac arrest. |
| Shapiro, 201013 | various, different hospitals | mixed, mostly semi-structured focus groups | to determine nurses perceptions of RRS impact on practice and what constitutes a successful RRS | multiple | impact on practice, characteristics of successful teams |  |
| Williams,\* 201114 | RRT model with ICU nurse, ED nurse, reps therapist | focus group methodology | clarify nurses perceptions of RRS | 156 bed community hospital | experience with activation, composition of teams, concerns about activating a RRT  advantage of RRT to nurses and patients |  |

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